UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/629,797	07/30/2003	David Chao Hua Wu	1875.4730000	9430

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EXAMINER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)
	10/629,797	WU, DAVID CHAO HUA
	Examiner	Art Unit
	Chat C. Do	2193

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on <u>04 June 2009</u>.

2a) ☒ This action is **FINAL**.   2b) ☐ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) <u>21-25 and 32-35</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) <u>21-25 and 32-35</u> is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All   b) ☐ Some * c) ☐ None of:

      1. ☐ Certified copies of the priority documents have been received.

      2. ☐ Certified copies of the priority documents have been received in Application No. _____.

      3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date <u>06/04/2009</u>.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____ .

DETAILED ACTION

1.   This communication is responsive to Amendment filed 06/04/2009.

2.   Claims 21-25 and 32-35 are pending in this application. Claim 21 is the independent

claim.   In Amendment, claims 1-20 and 26-31 are previously cancelled. This Office Action is

made final.

Claim Rejections - 35 USC § 103

3.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

4.   Claims 21-25 and 32-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Collier et al. (U.S. 5,404,405) in view of Matsui (U.S. 4,716,589) in further view of Simanapalli

et al. (U.S. 6,002,726).

Re claim 21, Collier et al. disclose in Figure 1 a system for producing a pulse

code modulation (PCM) signal (e.g. abstract, Figure 1 and col. 1 lines 18-41),

comprising: a first filter configured to produce an in-phase signal I(n) from a signal (e.g.

by component 8 in Figure 1 and col. 2 lines 63-68); a second filter configured to produce

a quadrature-phase signal Q(n) from the in-phase signal I(n) (e.g. the Hilbert filter 18 in

Figure 1), a FM demodulator (e.g. all the components 18, 20, 22, 24, 26, 28, 30 and 34 in

Figure 1) configured to produce a FM demodulated signal substantially equal to

Z(n)/X(n), wherein Z(n) and X(n) are functions of I(n) and Q(n) (e.g. by output of

components 30 and 34 in Figure 1), the FM demodulator including a denominator device

that estimates a value 1/X(n) (e.g. for computing the I^2+Q^2 in component 30 in Figure 1);

and a third filter configured to produce the PCM signal from the FM demodulated signal

(e.g. output of the filters 40 and 42 in Figure 1).

Collier et al. fail to disclose two limitations (1) the denominator device estimates

a value 1/X(n) based at least in part on a prior estimated value of 1/X(n) and a transition

speed of X(n) and (2) the signal is the secondary audio program (SAP). However, SAP is

known in the art as clearly addressed in Matsui's reference. Matsui's reference discloses

the SAP throughout the specification (e.g. col. 1 lines 14-51) with similar

modulation/demodulation scheme. In addition, Simanapalli et al. clearly disclose the

denominator device estimates a value 1/X(n) based at least in part on a prior estimated

value of 1/X(n) and a transition speed of X(n) (e.g. Figure 3, particular component 78

wherein the transition speed occurs within the input value x(n) and the previous estimated

value y(n-1) by the evaluated component 78).

Therefore, it would have been obvious to a person having ordinary skill in the art

at the time the invention is made to replace/add the signal with the SAP as clearly seen in

Matsui's invention and the denominator device estimates a value 1/X(n) based at least in

part on a prior estimated value of 1/X(n) and a transition speed of X(n) as seen in

Simanapalli et al.'s invention into Collier et al.'s invention because it would enable to

reproduce the information from the broadcasting signal efficiently (e.g. whole column 1

and col. 3 lines 51-68 in Matsui's reference and col. 2 lines 32-39 in Simanapalli et al.'s

reference) .

Re claim 22, Collier et al. further disclose in Figure 1 Z(n) is substantially equal

to [IQ'-I'Q] and X(n) is substantially equal to [I^2+Q^2] (e.g. by component 30 in Figure 1

wherein I and Q are periodic signals).

Re claim 23, Collier et al. in view of Matsui further to disclose in Figure 1 the

SAP signal is a constant magnitude signal, a sine wave, or a cosine wave (e.g. inherently

for FM modulation scheme).

Re claim 24, Collier et al. further disclose in Figure 1 the first filter is a band pass

filter (e.g. filter 8 in Figure 1 and col. 2 lines 63-68 for selective band).

Re claim 25, Collier et al. further disclose in Figure 1 the second filter is a Hilbert

filter (e.g. by the filter 18 in Figure 1 for phase shifting the original signal I(n)).

Re claims 32-35, Collier et al. in view of Matsui fail to disclose the denominator

devices estimates the value 1/X(n) based at least in part on the prior estimated value of

1/X(n) plus an error value wherein the error value is substantially equal to [1-X(n)/X(n-

1)] and the error value is scaled by a value of a scaling coefficient before being added to

the prior estimated value of 1/X(n) and wherein the value of the scaling coefficient is

based on the transition speed of X(n). However, Simanapalli et al. disclose in Figures 2-3

the denominator devices estimates the value 1/X(n) based at least in part on the prior

estimated value of 1/X(n) plus an error value wherein the error value is substantially

equal to [1-X(n)/X(n-1)] and the error value is scaled by a value of a scaling coefficient

before being added to the prior estimated value of 1/X(n) (e.g. Figure 3, particularly

component 78) and wherein the value of the scaling coefficient is based on the transition

speed of X(n) (e.g. Figure 2).

Therefore, it would have been obvious to a person having ordinary skill in the art

at the time the invention is made to add the denominator devices estimates the value

1/X(n) based at least in part on the prior estimated value of 1/X(n) plus an error value

wherein the error value is substantially equal to [1-X(n)/X(n-1)] and the error value is

scaled by a value of a scaling coefficient before being added to the prior estimated value

of 1/X(n) and wherein the value of the scaling coefficient is based on the transition speed

of X(n) as seen in Simanapalli et al.'s invention into Collier et al. in view of Matsui's

invention because it would enable to enhance the system performance (e.g. col. 2 lines

32-39).

Double Patenting

5.   The nonstatutory double patenting rejection is based on a judicially created doctrine
grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or
improper timewise extension of the "right to exclude" granted by a patent and to prevent possible
harassment by multiple assignees.   A nonstatutory obviousness-type double patenting rejection
is appropriate where the conflicting claims are not identical, but at least one examined
application claim is not patentably distinct from the reference claim(s) because the examined
application claim is either anticipated by, or would have been obvious over, the reference
claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re
Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225
USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re
Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163
USPQ 644 (CCPA 1969).
        A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may
be used to overcome an actual or provisional rejection based on a nonstatutory double patenting
ground provided the conflicting application or patent either is shown to be commonly owned
with this application, or claims an invention made as a result of activities undertaken within the
scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

6.   Claims 21-25 and 32-35 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 3 and 9 of U.S. Patent No. 7,006,806 in view of Simanapalli et al.

Claims 1, 3 and 9 of Patent No. 7,006,806 contain similar elements of claims 21-25 of the instant application and thus anticipated the claims of the instant application. these claims do not contain the limitations of the denominator devices estimates the value $1/X(n)$ based at least in part on the prior estimated value of $1/X(n)$ plus an error value wherein the error value is substantially equal to $[1-X(n)/X(n-1)]$ and the error value is scaled before being added to the prior estimated value of $1/X(n)$ and a transition speed of $X(n)$ and wherein the value of the scaling coefficient is based on the transition speed of $X(n)$. However, Simanapalli et al. disclose in Figures 2-3 the denominator devices estimates the value $1/X(n)$ based at least in part on the prior estimated value of $1/X(n)$ plus an error value wherein the error value is substantially equal to $[1-X(n)/X(n-1)]$ and the error value is scaled before being added to the prior estimated value of $1/X(n)$ (e.g. Figure 3, particularly component 78) and a transition speed of $X(n)$ and wherein the value of the scaling coefficient is based on the transition speed of $X(n)$ (e.g. Figure 2).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention is made to add the denominator devices estimates the value $1/X(n)$ based at least in part on the prior estimated value of $1/X(n)$ plus an error value wherein the error value is substantially equal to $[1-X(n)/X(n-1)]$ and the error value is

scaled before being added to the prior estimated value of 1/X(n) and a transition speed of

X(n) and wherein the value of the scaling coefficient is based on the transition speed of

X(n) as seen in Simanapalli et al.'s invention into the Patent 7,006,806 because it would

enable to enhance the system performance (e.g. col. 2 lines 32-39).

"A later patent claim is not patentably distinct from an earlier patent claim if the later claim is obvious over, or
anticipated by, the earlier claim. In re Lonqi, 759 F.2d at 896, 225 USPQ at 651 (affirming a holding of
obviousness type double patenting because the claims at issue were obvious over claims in four prior art patents); In
re Berg, 140 F.3d at 1437, 46 USPQ2d at 1233 (Fed. Cir. 1998) (affirming a holding of obviousness-type double
patenting where a patent application claim to a genus is anticipated by a patent claim to a species within that genus).
" ELI LILLY AND COMPANY v BARB LABORATORIES, INC., United States Court of Appeals for the Federal
Circuit, ON PETITION FOR REHEARING EN BANC (DECIDED: May 30, 2001).

"Claim 12 and Claim 13 are generic to the species of invention covered by claim 3 of the patent. Thus, the generic
invention is **"anticipated"** by the species of the patented invention. Cf., Titanium Metals Corp. v. Banner, 778 F.2d
775, 227 USPQ 773 (Fed. Cir. 1985) (holding that an earlier species disclosure in the prior art defeats any generic
claim) 4 . This court's predecessor has held that, without a terminal disclaimer, the species claims preclude issuance
of the generic application. In re Van Ornum, 686 F.2d 937, 944, 214 USPQ 761, 767 (CCPA 1982); Schneller, 397
F.2d at 354. Accordingly, absent a terminal disclaimer, claims 12 and 13 were properly rejected under the doctrine
of obviousness type double patenting." (In re Goodman (CA FC) 29 USPQ2d 2010 (12/3/1993).

Response to Arguments

7.   Applicant's arguments filed 06/04/2009 have been fully considered but they are not

persuasive.

    a.   The applicant comments in page 4 for claims rejected under double patenting that

the rejection to be held in abeyance until claimed subject matter is otherwise deemed

allowable.

        The examiner respectfully submits that the double patenting rejection will be

maintained and presented in the current Office Action since the applicant has not

fully addressed or replied to the double patenting rejection.

b.   The applicant argues in pages 5-6 for claims rejected under 35 U.S.C. 103(a) that

the cited reference fails to disclose the limitation of "a transition speed of X(n)" as cited

in the claimed invention wherein Simanapalli only discloses the single sample of their

respectively signals.

The examiner respectfully submits that the applicant does not provide within the

original scope as what is the transition speed of X(n) and how it would not be

seen within the cited reference. The applicant just merely repeats the terminology

or limitations as "the transition speed of X(n)" is not seen within the cited

reference. The examiner firmly believe the secondary reference by Simanapalli

discloses the context of the phrase "the transition speed of X(n)" within the

operation block 78 in Figure 3 wherein the current estimated value r[n+1] (e.g. as

y[n]) is also based on value of current input sample x[n+1] and the previous

estimated value r[n]. This product is called transition speed of x[n] since the

value of x[n] would indicate the amount of transition of final computed result.

This interpretation is exactly within the context of the original specification of the

current claimed invention.

Conclusion

8.   **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time

policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the mailing

date of this final action.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to CHAT C. DO whose telephone number is (571)272-3721. The

examiner can normally be reached on Tue-Fri 9:00AM to 7:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Lewis Bullock can be reached on (571) 272-3759. The fax phone number for the

organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would

like assistance from a USPTO Customer Service Representative or access to the automated

information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Chat C. Do/
Primary Examiner, Art Unit 2193

July 5, 2009